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I Claim:

1. A method for analyzing a gas sample, comprising:

providing a gas sample or converting a sample to a gas sample;

increasing pressure applied to the gas sample to compress the sample to a smaller volume and provide a pneumatically focused gas sample; and

analyzing the pneumatically focused gas sample.

2. The method according to claim 1 where the gas sample is pneumatically focused concurrently with or just prior to reaching a separatory column.

3. The method according to claim 1 where the gas sample is pneumatically focused concurrently with or just prior to reaching a spectrometric cell.

4. The method according to claim 1 where the gas sample is an air sample

5. The method according to claim 1 where the gas sample is a breath sample.

6. The method according to claim 1 where providing a gas sample comprises continuously providing an air sample for pollution analysis.

7. The method according to claim 1 where providing a gas sample comprises continuously providing a breath sample for analysis.

8. The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample comprises increasing the pressure of the sample to a pressure of from about 100 psi to about 15,000 psi.

9. The method according to claim 8 where the sample is analyzed using an optical waveguide.

10. The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample comprises increasing the pressure of the sample to a pressure of from about 200 psi to about 2,000 psi.

11. The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample comprises increasing the pressure of the sample to a pressure of from about 300 psi to about 700 psi.

12. The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample is accomplished using a gas selected from the group consisting of hydrogen, helium, nitrogen, argon, carbon dioxide, air, or mixtures thereof.

13. The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample is accomplished using a focusing-carrier gas containing an internal standard.

14. The method according to claim 1 where methane in the sample is used as an internal standard.

15. The method according to claim 12 where at least one gas is supercritical.

16. The method according to claim 15 where carbon dioxide or argon is supercritical.

17. The method according to claim 1 where analyzing the pneumatically focused sample comprises reducing the pressure of the carrier-pneumatic focusing gas simultaneously with or subsequent to a pneumatically focused sample being injected onto a separatory column or a spectrometric cell.

18. The method according to claim 1 where the gas sample is pneumatically focused using a carrier gas or a compressor at a first pressure and further comprising rapidly

decreasing or increasing pressure between a first and second pressure.

19. The method according to claim 18 where the first pressure is changed to the second pressure simultaneously with or subsequent to the sample being introduced to a spectrometric cell.

20. The method according to claim 17 where the pressure is reduced to 100 psi or less.

21. The method according to claim 1 where analyzing the pneumatically focused sample comprises cooling a head portion of the column prior to injecting the pneumatically focused sample onto the column.

22. The method according to claim 1 where analyzing the pneumatically focused sample comprises heating the column subsequent to injecting the pneumatically focused sample onto the column.

23. The method according to claim 1 where analyzing the pneumatically focused sample includes eluting a pneumatically focused sample with a first carrier gas, and then eluting the column with a second carrier gas.

24. The method according to claim 1 where analyzing the pneumatically focused sample comprises reducing the focusing pressure to a lower valve and then a supercritical fluid is introduced gradually to replace an initial carrier gas used to pneumatically focus the sample.

25. The method according to claim 23 where either the first or second gas is supercritical.

26. The method according to claim 23 where compositions of the first and second gases are changed continuously or discontinuously using gradient elution.

27. The method according to claim 23 where pressures of the first and second gases are changed continuously or discontinuously using gradient elution.

28. The method according to claim 1 and further comprising continuously analyzing pneumatically focused samples.

29. The method according to claim 1 and further comprising averaging individual chromatograms of pneumatically focused samples.

30. The method according to claim 29 where peak locations determined from the average are used to integrate peak areas in individual chromatograms contributing to the average.

31. The method according to claim 1 where analytes from the pneumatically focused sample are determined by a detector selected from the group consisting of FID, IR, FTIR, NDIR, ECD, TCD, NPO, FPO, UV/Visible detectors, and combinations thereof.

32. The method according to claim 1 where the pneumatically focused sample is parallel or serially injected onto plural parallel or serial separatory columns.

33. The method according to claim 32 where the pneumatically focused sample is analyzed by 2 dimensional chromatography.

34. The method according to claim 32 where the pneumatically focused sample is analyzed by comprehensive chromatography.

35. An automated method according to claim 1.

36. The method according to claim 35 where the method is computer controlled.

37. A method for analyzing an air sample, comprising:

collecting an air sample;

increasing the pressure of the sample to a pressure of from about 100 psi to about 15,000 psi to pneumatically focus the air sample; and

analyzing the pneumatically focused sample in real time using a gas chromatograph or a spectrometer.

38. The method according to claim 37 where the air sample is collected continuously into an averaging volume.

39. The method according to claim 37 and further including cryofocusing the air sample either prior to or subsequent to pneumatically focusing the sample.

40. The method according to claim 37 and further including reduced temperature focusing the air sample either prior to or subsequent to pneumatically focusing the sample.

41. The method according to claim 40 where reduced temperature focusing occurs on a separatory column.

42. The method according to claim 40 where reduced temperature focusing is accomplished using a device upstream of a separatory column.

43. The method according to claim 40 where reduced temperature focusing occurs in a spectrometric cell.

44. The method according to claim 40 where reduced temperature focusing is accomplished using a device upstream of a spectrometric cell.

45. An automated, remotely operated method according to claim 37.

46. The method according to claim 1 where the air sample comprises a breath sample.

47. The method according to claim 1 where portions of the pneumatically focused sample are fed to separate columns upstream of separate, plural detectors.

48. The method according to claim 47 where the detectors are connected in series.

49. The method according to claim 47 where the plural detectors are connected in parallel.

50. The method according to claim 1 where the pneumatically focused sample is fed to plural separatory columns.

51. The method according to claim 50 where the separatory columns are connected in series.

52. The method according to claim 50 where the separatory columns are connected in parallel.

53. The method according to claim 50 where analytes are pneumatically focused during transit between or among columns.

54. A gas chromatograph and gaseous sample analysis system, comprising:

a sample loop for receiving a first volume of a gaseous sample;

a separatory column fluidly connected to and downstream of the sample loop;

an inline pressure-increasing valve downstream of the separatory column which increases system pressure to pneumatically focus the gaseous sample and reduces flow rate through the system; and

a detector downstream or upstream of the pressure increasing valve for detecting analytes.

55. The system according to claim 54 where the linear flow rate is reduced to be lower than that through the system prior to increasing the pressure with the inline valve.

56. The system according to claim 54 where the linear flow rate is increased to a flow rate higher than that through the system prior to increasing the pressure with the inline valve.

57. The system according to claim 54 where the linear flow rate is reduced to a flow rate that is substantially the same as that through the system prior to increasing the pressure with the inline valve.

58. The system according to claim 54 where the sample coil has a first volume which provides a sufficient sample amount to allow adequate analyte sensitivity once a sample is pneumatically focused, and wherein the sample amount can be equal to less than or equal to the first amount.

59. The system according to claim 54 including plural separatory columns.

60. The system according to claim 54 including plural detectors.

61. The system according to claim 54 and including a vacuum pump to draw a gas sample through the column.

62. The system according to claim 54 and further is comprising plural separatory columns.

63. The system according to claim 54 and further comprising plural sample collection coils and plural separatory columns.

64. The system according to claim 54 and further including a sample collection pump for drawing the gaseous sample into the gas sample collection coil.

65. The system according to claim 54 and further including a computer for controlling the system.

66. The system according to claim 54 where the computer is operated by a neural network and expert systems.

67. The system according to claim 54 where the gas chromatograph is located on a microchip.

68. The method according to claim 1 where a pneumatically focused sample is sent directly to a detector without first being injected onto a separatory column.

69. The method according to claim 1 where the gas sample is provided by a gas canister having a pre-stored gaseous sample.

70. The method according to claim 1 where the air sample includes a material selected from the group of air toxics, VOCs, OVOCs, metabolites, anesthetics, and combinations thereof.

71. The method according to claim 1 where the gas sample is collected at a boundary of a site for fence-line monitoring of analytes.

72. The method according to claim 1 where providing the gaseous sample comprises providing the sample to a column within a period of less than one minute.

73. The method according to claim 73 and providing the sample to a column within a period of less than about 1 second.

74. The method according to claim 55 and providing the sample to a column within a period of less than about 1 millisecond.

75. The method according to claim 1 where the gas sample is an exhalation from a respiratory organism.

76. The method according to claim 1 and further comprising determining the directional distribution of pollution sources.

77. The method according to claim 1 and further comprising using a Gaussian Plume model to determine source location, emission rate, or both.

78. The method according to claim 1 and further comprising determining analyte source location by triangulation.

79. The method according to claim 1 and further comprising removing materials from the gaseous sample prior to pneumatically focusing the sample.

80. The method according to claim 79 where materials removed from the sample are selected from the group consisting of water vapor, aerosols, ozone, NO2, and combinations thereof.

81. The method according to claim 79 where the materials are removed by filtering, absorption, vortexing, and combinations thereof.

82. The method according to claim 1 further comprising condensing water vapor in the gaseous sample by Pneumatic Focusing.

83. The method according to claim 82 where the condensed water vapor is removed prior to analyzing the gaseous sample using an analytical device.

84. The method according to claim 83 where the condensed water vapor contains water-soluble analytes, and such water-soluble analytes are collected for "continuously or discontinuously" subsequent analysis.

85. The system according to claim 51 including a computer for continuously operating the system.

86. The method according to claim 1 where the liquid is water.

87. The method according to claim 13 where methane is added to the focusing-carrier gas.

88. The method according to claim 39 where the air sample is cryogenically liquified.

89. The method according to claim 1 where the pneumatically focused sample is separated into aqueous and gaseous components which are separately analyzed.

90. The method according to claim 1 where the pneumatically focused sample is subsequently cryogenically liquefied.

91. The method according to claim 1 wherein pneumatic focusing is used to make eddy correlation measurements to quantify fluxes.